

A Metrication and Comparison Framework for E-Commerce Systems

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1 Overview and Motivation

“We live in an era of ‘e-everything’ ” [1]. Everywhere we look, we see people trying to fuse technology with every imaginable business concept in the hope of making more money. We have seen e-commerce, e-procurement, e-logistic, e-government, and e-banking to name a few. The late 1990’s saw technology stocks on the market inflate to astronomical levels as would-be entrepreneurs wrongly reasoned that this wonderful new technology would automatically catapult them to unimaginable riches. Thousands of dot-com startups emerged in the in the early months of the new millennium, thousands of dot-com startups crashed.

We know now that setting up an online venture is no guarantee of success. Business creativity and discipline also need to be applied. The business and technical aspects of an e-commerce venture will together contribute to its degree of success (or failure) and one cannot go without the other.

Now that we have years of case studies available, can we apply theory, technical knowledge an good old-fashioned hindsight to predict whether and e-commerce system will succeed or fail? Are we capable of accurately forecasting whether one venture will fare better than another? Can a metrication framework for e-commerce systems be developed to measure the quality attributes of e-commerce systems? If so, at which stage of the development of a system would such a framework be applicable?

2 Project Outline

The project will attempt to develop a metrication and methodology framework for measuring the quality of e-commerce systems. Although this is principally a technological degree, research also needs to be conducted into the business aspect of e-commerce systems since business considerations will also affect the quality an e-commerce venture. Therefore this project will analyse e-commerce applications from principally technological lense but will also take into account the business point of view.

2.1 The Technical Point of View

The technical aspect of this project will focus on existing and upcoming technologies that are available and can be used in the design and implementation of e-commerce systems. A number of questions will be asked. The following are a few that initially come to mind:

- (a) Are there any particular project life-cycles that lend themselves to better quality e-commerce systems?
- (b) At what particular stage (if any) of a project's life-cycle is quality built in?
- (c) What traditional quality attributes can be used to measure the quality of e-commerce systems? Are these enough? Can we create new quality attributes specific to e-commerce products?
- (d) What technologies are used throughout the lifetime of an e-commerce application?
- (e) How can these technologies affect the quality of such a venture?
- (f) Can a way be found to compare e-commerce products based on the different technologies, methodologies, etc use during their lifetime?

These questions will obviously evolve throughout the course of the project as continuing research will undoubtedly uncover more unanswered questions.

2.2 The Business Point of View

Here different business models and their applicability to different kinds of ventures will be reviewed. Various questions need to be answered at this stage. These include (but are not limited to):

- (a) Are business models for "conventional" business applicable to e-commerce ventures?
- (b) Have any business models been developed specifically for e-commerce ventures?
- (c) How can one map a business model being used in an existing traditional business to an e-commerce model?
- (d) What business-aspect quality attributes exists for e-commerce systems and how can they be measured?
- (e) Can we propose new business-aspect quality attributes for e-commerce systems?

The aim is to merge both aspects together towards the end of the project in order to come up with a complete set of quality attributes, metrics for measuring them and accompanying methodologies that encompass activities and processes over the whole spectrum from the purely business aspect to the purely technical.

3 Expected Activities

The project is envisaged to involve a mix of activities:

- Research into work that has already been done in this area
- User surveys to help establish what quality attributes users of e-commerce systems appreciate most
- Industry surveys to get a feel of what development methodologies are used by web development companies as well as their general outlook towards building quality into e-commerce systems.
- Development of a metrication framework to measure the quality of an e-commerce system
- Application of the metrication system to a life case study in order to test its validity
- Implementation of a software tool to demonstrate the metrics, methodologies and results developed throughout the course of the project.

References

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